

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

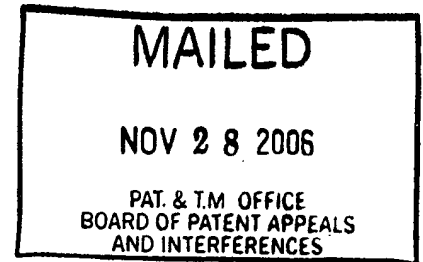
UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ERIC MENARD and COLIN SMITH

Appeal No. 2006-3182
Application No. 09/883,963

ON BRIEF¹



Before THOMAS, SAADAT and HOMERE, Administrative Patent Judges.

HOMERE, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the final rejection of claims 12 through 26, all of which are pending in this application.

We reverse.

¹ Appellants' attendance at the Oral Hearing set for November 15, 2006 was obviated by the above-noted panel's determination to reverse the outstanding rejection of the claims on appeal. This was communicated to Appellant's representative by telephone on November 14, 2006.

Invention

Appellants' invention relates generally to a system for remotely locking and unlocking a panel of a motor vehicle (V). First, upon sensing the presence of a user's badge (2), the vehicle transponder (6) transmits a radio frequency (RF) interrogation signal, which carries a pseudo random code previously stored in a circular shift register (7) of the automobile. Upon receiving the pseudo random code, a de-spreader (14) located on the user's badge (2) synchronizes it with a corresponding pseudo-random code stored in the user's badge memory (13) by a time shift less than required for an intermediate transmission means to intercept and retransmit the interrogation signal. The transceiver (12) in the user's badge (2) subsequently transmits to the vehicle transponder (6) an RF response signal, which carries a pseudo-random code and a signature that uniquely identifies the user. Upon receipt of the response signal, a de-spreader (8) located on the vehicle synchronizes it with a corresponding pseudo-random code stored in the memory of the vehicle (7) by a time shift less than required for an intermediate transmission means to intercept and retransmit the response signal, and for verifying that the user's signature is authentic.

Claim 12 is representative of the claimed invention and is reproduced as follows:

12. A system for controlling locking/unlocking means of at least one openable panel of a vehicle, comprising:

vehicle transmission/reception means (3, 4, 5) carried by the vehicle, comprising

vehicle memory means (7) comprising a vehicle circular shift register in which is stored a pseudo-random code;

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vehicle transmission means (3, 6, 7) for transmitting an interrogation signal which carries the pseudo-random code; and

vehicle de-spreading means (6, 7, 8) for de-spreading a response signal received unless a pseudo-random code carried by the response signal is not synchronized in substantial correlation with a corresponding pseudo-random code stored in the vehicle memory means (7) by a time shift less than required for an intermediate transmission means to intercept and retransmit a response signal, and for verifying whether the received signal carries a signature of a user transmission means; and

user transmission/reception means (9, 10, 11) intended to be carried by a user for transmitting the response signal for controlling unlocking actuation of the operable panel, comprising

user memory means comprising a user circular shift register (13) in which is stored the pseudo-random code;

user de-spreading means (12, 13, 14) for de-spreading the transmission signal received unless the pseudo-random code carried by the interrogation signal is not synchronized in substantial correlation with a corresponding pseudo-random code stored in the user memory means (13) by a time shift less than required for an intermediate transmission means to intercept and retransmit the interrogation signal; and

the user transmission means (9, 12, 13, 14) for transmitting the response signal which carries the pseudo-random code and the signature which is specific to the user transmission/reception means.

References

The Examiner relies on the following references:

Lambropoulos	5,736,935	Apr. 7, 1998
Bates	6,057,779	May 2, 2000
(Filed on Aug. 14, 1997)		

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Zierner et al. (Zierner), Digital Communications and Spread Spectrum Systems, MacMillan Publishing Company (1985) pp.332-340.

Rejection at Issue

A. Claims 12 through 26 stand rejected under 35 U.S.C. § 103 as being unpatentable over the combination of Lambropoulos, Bates and Zierner.

Rather than reiterate the arguments of Appellants and the Examiner, the opinion refers to respective details in the Briefs² and the Examiner's Answer.³ Only those arguments actually made by Appellants have been considered in this decision. Arguments that Appellants could have made but chose not to make in the Briefs have not been taken into consideration. See 37 CFR 41.37(c)(1) (vii)(eff. Sept. 13, 2004).

OPINION

In reaching our decision in this appeal, we have carefully considered the subject matter on appeal, the Examiner's rejections, the arguments in support of the rejections and the evidence of obviousness relied upon by the Examiner as support for the rejections. We have, likewise,

² Appellants filed an Appeal Brief on March 13, 2006. Appellants filed a Reply Brief on July 17, 2006.

³ The Examiner mailed an Examiner's Answer on May 17, 2006. The Examiner mailed an office communication on August 11, 2006 stating that the Reply Brief has been entered and considered.

reviewed and taken into consideration Appellants' arguments set forth in the Briefs along with the Examiner's rationale in support of the rejections and arguments in the rebuttal set forth in the Examiner's Answer. After full consideration of the record before us, we do not agree with the Examiner that claims 12 through 26 are properly rejected under 35 U.S.C. § 103 as being unpatentable over the combination Lambropoulos, Bates and Ziemer. Accordingly, we reverse the Examiner's rejection of claims 12 through 26 for the reasons set forth **infra**.

I. Under 35 U.S.C. § 103, is the Rejection of Claims 12 through 26 as being unpatentable over combinations of Lanbropoulos, Bates and Ziemer Proper?

In rejecting claims under 35 U.S.C. § 103, the Examiner bears the initial burden of establishing a **prima facie** case of obviousness. *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). *See also In re Piasecki*, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984). The Examiner can satisfy this burden by showing that some objective teaching in the prior art or knowledge generally available to one of ordinary skill in the art suggests the claimed subject matter. *In re Fine*, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). Only if this initial burden is met does the burden of coming forward with evidence or argument shift to the Appellants. *Oetiker*, 977 F.2d at 1445, 24 USPQ2d at 1444. *See also Piasecki*, 745 F.2d at 1472, 223 USPQ at 788. Thus, the examiner must not only assure that the requisite findings are made, based on evidence of record, but must also explain the reasoning by which the findings are deemed to support the examiner's

conclusion. However, a suggestion, teaching, or motivation to combine the relevant prior art teachings does not have to be found explicitly in the prior art, as the teaching, motivation, or suggestion may be implicit from the prior art as a whole, rather than expressly stated in the references. The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art. *In re Kahn*, 441 F.3d 977, 987-88, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006) citing *In re Kotzab*, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1316-17 (Fed. Cir. 2000). See also *In re Thrift*, 298 F.3d 1357, 1363, 63 USPQ2d 2002, 2008 (Fed. Cir. 2002).

An obviousness analysis commences with a review and consideration of all the pertinent evidence and arguments. “In reviewing the [E]xaminer’s decision on appeal, the Board must necessarily weigh all of the evidence and argument.” *Oetiker*, 977 F.2d at 1445, 24 USPQ2d at 1444. “[T]he Board must not only assure that the requisite findings are made, based on evidence of record, but must also explain the reasoning by which the findings are deemed to support the agency’s conclusion.” *In re Lee*, 277 F.3d 1338, 1344, 61 USPQ2d 1430, 1434 (Fed. Cir. 2002).

With respect to representative claim 12, Appellants argue in the Appeal and Reply Briefs that neither Lanbropoulos nor Bates nor Ziemer teaches the limitation of synchronizing a

received pseudo code with a corresponding code already stored in memory through a substantial correlation process within a time shift less than required for an intermediate transmission to intercept and retransmit a response/interrogation signal. Particularly, at page 5 of the Appeal Brief,⁴ Appellants state the following:

The examiner concedes that Lambopoulos (Primary reference) fails to disclose many of the claimed limitations. Official Action of December 29, 2004, page 3 line 18 through page 4 line 9 and looks to Bates and Zeimer in an attempt to fill in the blanks and reconstruct applicant's invention. However, the prior art is simply void of any teaching to require the reception of the response signal with substantial correlation (within a predetermined time shift) before unlocking may be controlled. This claimed scheme is completely void in the art of vehicle panel lock control. While Bates may disclose the use of spread spectrum modulation technology, there is no teaching of a requirement that a signal be received within a time shift as a condition for subsequent control.

In order for us to decide the question of obviousness, "[t]he first inquiry must be into exactly what the claims define." *In re Wilder*, 429 F.2d 447, 450, 166 USPQ 545, 548 (CCPA 1970). "Analysis begins with a key legal question-- what is the invention claimed?"...Claim interpretation...will normally control the remainder of the decisional process." *Panduit Corp. v. Dennison Mfg.*, 810 F.2d 1561, 1567-68, 1 USPQ2d 1593, 1597 (Fed. Cir. 1987).

We note that representative claim 12 reads in part as follows:

Vehicle de-spreading means (6, 7, 8) for de-spreading a response signal received unless a pseudo-random code carried by the response signal is not

⁴ Appellants reiterate this same argument at page 2 of the Reply Brief.

synchronized in substantial correlation with a corresponding pseudo-random code stored in the vehicle memory means (7) by a time shift less than required for an intermediate transmission means to intercept and retransmit a response signal, and for verifying whether the received signal carries a signature of a user transmission means. . .

user de-spreading means (12, 13, 14) for de-spreading the transmission signal received unless the pseudo-random code carried by the interrogation signal is not synchronized in substantial correlation with a corresponding pseudo-random code stored in the user memory means (13) by a time shift less than required for an intermediate transmission means to intercept and retransmit the interrogation signal.

We also note that at page 6, paragraphs 25 and 26, Appellants' specification states the following:

[0025] More exactly, the correlation value varies, as a function of the phase shift between the pseudo-random code carried by the signal received and the pseudo-random code of the shift register 13, in the manner which is illustrated in Figure 2. It takes its maximum value when the two codes are perfectly synchronized and becomes a minimum for time shifts of at least one bit period. For time shifts of less than one bit period, it varies linearly between its maximum value and its minimum value.

[0026] Thus, there is substantially correlation between the two pseudo-random codes, for as long as the code received is shifted in time by less than half a bit period with respect to the code of the shift register 13 of the badge 2.

Thus, Appellants' representative claim 12 does require synchronizing a received pseudo code with a corresponding code already stored in memory through a substantial correlation process within a time shift less than required for an intermediate transmission to intercept and

retransmit a response/interrogation signal.

Now, the question before us is what the combination of Lambropoulos, Bates and Ziemer would have taught to one of ordinary skill in the art? To answer this question, we find the following facts:

1. At column 7, lines 6 through 19, Lambropoulos states the following:

Transceiver A receives the interrogation signal processes it in the manner already described and, if the interrogation code received from transceiver C matches that which is prestored at the register 52 in transceiver A, transmits a reply signal back to transceiver C. Upon receipt of the reply signal, transceiver C compares the reply security code with the codes stored in registers 100 and 102. That reply signal includes a function code which is clocked into the microcomputer 80 and stored in the function code register 108. The function code now received as part of the reply signal requests that the vehicle door be unlocked. Thus, when an operator carrying transceiver A enters the range of the interrogation signal transmitted by transceiver C, the doors of the vehicle automatically unlock.

2. At column 7, lines 38 through 45, Bates states the following:

More particularly, incoming spread spectrum received by the device 32 or interrogator 47 are demodulated through cross correlation with a version of the pseudo random carrier that is generated by the device 32 itself or the interrogator 47 itself, respectfully. Cross correlation with the correct PN sequence unspreads the spread spectrum signal and restores the modulated message in the same narrow band as the original data.

3. At column 7, lines 51 through 65, Bates states the following:

A pseudo-noise sequence has many characteristics that are similar to those of random binary sequences. For example, a pseudo-noise sequence has a nearly equal number of zeros and ones, very low correlation between shifted versions of

the sequence, and very low cross correlation between any two sequences. A pseudo-noise sequence is usually generated using sequential logic circuits. For example, a pseudo-noise sequence can be generated using a feedback shift register.

A feedback shift register comprises consecutive stages of two state memory devices, and feedback logic. Binary sequences are shifted through the shift registers in response to clock pulses, and the output of the various stages are logically combined and fed back as the input to the first stage.

With the above discussion in mind, we find that the combination of Lambropoulos, Bates and Ziemer would have not led the ordinarily skilled artisan to the claimed invention.

Particularly, Lambropoulos teaches a transceiver located at a vehicle for transmitting an interrogation signal to a remotely located transceiver. In response, the remote transceiver transmits codes to the vehicle transceiver. If the transmitted codes match corresponding codes pre-stored in the memory of the vehicle, the door of the vehicle is consequently locked or unlocked. Next, we find that Bates teaches an interrogator that transmits modulated spread spectrum signals to a remote intelligent communication device. The transmitted signals are then demodulated through cross correlation with a version of the pseudo random carrier. The demodulated codes are then compared with binary sequences pre-stored in a feedback shift register that are shifted in response to various clock pulses. Additionally, we find that Ziemer teaches a method for de-spreading a desired signal through the autocorrelation of an infinite sequence of random binary digits. (pages 336-37).

It is our view that one of ordinary skill in the art would have readily recognized that the

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combined teachings of Lambropoulos, Bates and Zeimer does not amount to the claimed invention. The proposed combination would, at best, amount to a system for remotely locking and unlocking a vehicle door by shifting binary sequences of transmitted pseudo codes to thereby auto-correlate said transmitted codes with codes already stored in the vehicle register. The ordinarily skilled artisan would have duly realized that the proposed combined teachings fall short of time-shifting the codes less than required for an intermediate transmission means to intercept and retransmit the response or interrogation signals. Consequently, we find error in the Examiner's stated position, which concludes that the combination Lambropoulos, Bates and Ziemer teaches synchronizing a received pseudo code with a corresponding code already stored in memory through a substantial correlation process within a time shift less than required for an intermediate transmission to intercept and retransmit a response/interrogation signal.

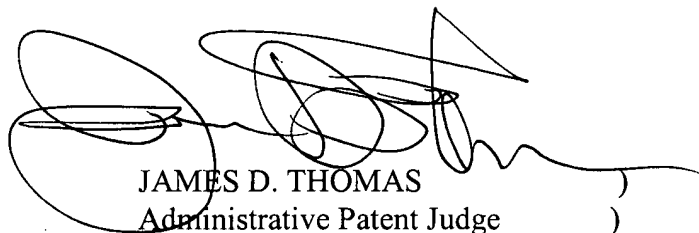
It is therefore our view, after consideration of the record before us, that the evidence relied upon and the level of skill in the particular art would not have suggested to the ordinarily skilled artisan the invention as set forth in representative claim 12. Accordingly, we will not sustain the Examiner's obviousness rejection of claims 12 through 26.


CONCLUSION

In view of the foregoing discussion, we have not sustained the Examiner's decision rejecting claims 12 through 26 under 35 U.S.C. § 103. Therefore, we reverse.

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REVERSED

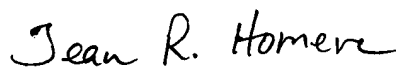

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